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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,574	12/20/2001	Thomas Owens	87354.2781	3781

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EXAMINER

MATTHEW, AARON D

ART UNIT	PAPER NUMBER
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2114

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/022,574	Applicant(s) OWENS, THOMAS	
	Examiner Aaron D Matthew	Art Unit 2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-9, and 11-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9 and 11-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 3-7, 9,11, and 13-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Coile et al, (U.S. 6,108,300).

In the forthcoming explanations, it will be assumed that an ability to respond to packets sent to an address, as discussed in the context of network devices disclosed by Coile et al, inherently requires communication capability with a network. Said assumption is in accordance with the general knowledge expected of one of ordinary skill in the art at the time of applicant's invention.

Regarding claim 1, Coile et al. teaches a method for providing backup server support, (see Abstract), comprising:

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- Operating a first server wherein the first server is capable of communication with a network, (col. 5, lines 55-61), and is associated with a primary server address, (note col. 5, lines 18-19);
- Maintaining a second server wherein the second server is capable of communication with the network, (col. 5, lines 61-65), configured in parallel with the first server, (note col. 6, lines 46-52), and is associated with a monitor server address, (col. 5, lines 32-34);
- Periodic messages sent between primary and secondary servers, (see col. 6, lines 14-22). According to the understanding of one of ordinary skill in the art, a message sent between two servers incorporates some form of signal, and therefore, Coile et al. teaches the following:
 - i. Signaling, using a first signal, the primary server address;
 - ii. Monitoring for a response to the first signal within a predetermined time period; and
 - iii. Repeating the signaling step and the monitoring step until a time period elapses, ("prescribed interval"), wherein the response is not received.

Moreover, the language in claim 16 of Coile et al, lines 3-5 discloses that the primary network device can become active if the primary network device is reset. Therefore, Coile et al also teaches the step of booting the first server after a response is not received and the server has failed, (See also col. 9, lines 23-28).

As interpreted by the examiner, Coile et al teaches the following steps as regards the booting of the primary network device:

- a. The second server sends a first signal to the primary server address, (col. 6, lines 14-19);
- b. The first server does not receive said first signal within a predetermined time period, (col. 9, line 15);
- c. The first server sends a second signal to the monitor server address; enters a first failure state, (see col. 9, lines 15-20; note that even when a communication attempt fails, it is disclosed that the communication attempts are continued as taught in col. 6, lines 14-19);
- d. The second server monitors for receipt of said second signal within a second time period, (col. 6, lines 14-19);
- e. The second server resends said first signal to the primary server address, (col. 6, lines 14-19);
- f. The first server, again, does not receive said first signal within a predetermined time period, (col. 9, lines 19-22);
- g. The first server resends said second signal to the monitor server address; enters a second failure state, and is rebooted, (col. 9, lines 23-28, again note that it has been disclosed that communication attempts continue regardless of the failure state of a network device, see col. 9, lines 15-20);
- h. The second server monitors for receipt of said second signal within a second time period, (col. 6, lines 14-19).

Therefore, the examiner has determined that Coile et al also teaches the steps of, in conjunction with the booting of the first server:

- Signaling, using a second signal, the monitor server address, (interpreted as either signaling step c or g, above); and
- Monitoring for a response to the second signal within a second time period, (interpreted as either monitoring step d or h, above).

Moreover, the claim language of “in conjunction with”, as interpreted by the examiner, is sufficiently broad so as to require only that the steps of signaling, using a second signal, and monitoring for a response to the second signal, be carried out within the same process that initiates the booting of the first server.

Regarding claims 13 and 20, the two servers operating in parallel, as disclosed by Coile et al, are inherently redundant. The backup server receives identical configuration data, must inherit all the functions of a failing primary server, and must perform identically in the event of said failure. Moreover, as they are both disclosed as computer network devices, the system functions described above and as applied to claim 1, inherently comprise a carrier containing computer program instructions thereon. Therefore, as explained above regarding claim 1, Coile et al teaches

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means for performing, and computer program instructions instructing a computer processor, (Fig. 9, element 914), to perform, the following steps:

- Signaling a primary server address;
- Monitoring for a response to the signal within a predetermined time period;
and
- Repeating the signaling step and the monitoring step until the response is not received within the predetermined time period, and thereafter performing a step of booting the first server, and in conjunction with the booting of the first server:
 - Signaling, using a second signal, the monitor server address; and
 - Monitoring for a response to the second signal within a second time period.

As per claim 20, Coile et al teaches a first computing apparatus communicatively connected to a network, (col. 5, lines 55-61), and corresponding to a primary server address, (col. 5 lines 18-19), and a second computing apparatus in communication with the network, (col. 5, lines 61-65), and configured in parallel with the first computing apparatus, (note col. 6, lines 46-52), and associated with a monitor server address, (col. 5, lines 32-34). A server, as disclosed by Coile et al and as understood by one of ordinary skill in the art, is inherently a computing apparatus.

Regarding claim 14, two servers are disclosed, that can operate as either a primary or a backup, (col. 5, lines 25-32). Coile et al, also, in reference to Fig. 9, elements

916 and 922, discloses that, in the preferred embodiment, each network device includes its own local memory. Therefore, Coile et al teaches a first and a second server including a first server memory and a second server memory respectively. As Coile et al teaches a means for copying data from the first server memory to the second server memory, (col. 6, lines 46-54), that is coincident with the process of periodically signaling the two servers, it is inherent in the design that data is copied from the first server memory to the second server memory after the signaling step is repeated a predetermined number of times.

Regarding claims 3, 5 and 15, see col. 4, lines 15-16, wherein the second server is operated as the first, in providing server services to the network, when the first has failed.

Regarding claim 4, see col. 5, lines 20-25, wherein the operating step comprises providing server services to the network.

As per claims 6 and 16, as it is disclosed in col. 4, lines 5-16, the second server is maintained in a backup mode so that the second server can be associated with the primary server address, (col. 4, lines 11-13), when the response is not received within the predetermined time period.

Regarding claims 7 and 17, the primary server address is an Internet protocol address in the embodiment disclosed in col. 4, lines 15-16.

Regarding claims 9 and 18, Fig. 5 discloses a process flow diagram illustrating that a response to the first signal in the time period is indicative of operation of the first server as the primary server, and an absence of the response to the first signal in the time period is indicative of primary server malfunction or inactivity.

Regarding claim 11, if a response to the second signal, (confirmation message from the primary server), is received within the given time period, the second server is operated as normal, (i.e. as a monitor or backup server), and continues to check the primary server for failure. Figure 5 shows a process flow diagram that illustrates the process by which a primary or backup network device is either failed, or allowed to proceed in its current operation.

Regarding claim 19, two servers are disclosed, that can operate as either a primary or a backup, (col. 5, lines 25-32). Coile et al, therefore, in reference to Fig. 9, elements 916 and 922, discloses a first and a second server including a first server memory and a second server memory respectively. Both servers are inherently considered computing apparatuses that are communicatively connected to a network, (see col.5 lines 55-65), the first and second server corresponding to a

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primary server address, (col. 5, lines 18-19), and secondary server address, (col. 5, lines 32-34), respectively.

Regarding claim 21, please see the arguments presented in reference to the method of claim 1, and note also that Coile et al teaches that said method wherein the first server includes a first server memory and the second server includes a second server memory, and further comprising an additional step of, after the signaling step is repeated a predetermined number of times, copying data from the first server memory to the second server memory. Please note that Coile et al, in reference to Fig. 9, elements 916 and 922, discloses that, in the preferred embodiment, each network device includes its own local memory. Therefore, Coile et al teaches a first and a second server including a first server memory and a second server memory respectively. As Coile et al teaches a means for copying data from the first server memory to the second server memory, (col. 6, lines 46-54), that is coincident with the process of periodically signaling the two servers, it is inherent in the design that data is copied from the first server memory to the second server memory after the signaling step is repeated a predetermined number of times.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coile et al as applied to claim 1 above, and further in view of Midgeley et al (U.S. 5,592,611).

Coile et al discloses a ping test, (col. 11, lines 11-17), consisting of sending out a broadcast ping request.

Coile et al fails to disclose a step of pinging the primary server address.

Midgeley et al teaches a server periodically broadcasting a "Service Advertising Protocol" (SAP) packet in response to a ping broadcast by a client, (col. 8, lines 6-12).

Midgeley et al and Coile et al are considered analogous art as they both teach a multiple server environment in which at least one server is used to replace another should the latter fail.

The preferred embodiment of applicant's invention, as disclosed in the language of claim 8, comprises the use of a ping protocol for determining the operational status of a primary server. Midgeley et al teaches the use of the ping protocol by a client in an attempt to receive an SAP packet from a server, and establish a connection.

The use of a ping protocol is well known in the art, and has been defined in The American Heritage College Dictionary as a means for a computer to determine whether another computer is reachable. It would have been clearly recognized by one of ordinary skill in the art that a computer that is not reachable may very well have experienced some failure. Therefore, one of ordinary skill in the art at the time of applicant's invention would have found it obvious, and would have been properly motivated, to use the ping protocol as a means of determining whether a primary server has failed.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coile et al as applied to claim 1 above, and further in view of Li et al (U.S. 5,473,599).

As best understood by the examiner, the preferred embodiment of applicant's invention teaches that a server attempting to operate as a monitor server, (see Fig. 2), will attempt to operate as primary server, (see Fig. 1), when discovering that another server is already operating as monitor server at the monitor server address. The examiner will assume that the phrase, "the second server is thereafter operated

as a primary server," on lines 2-3 of claim 12, is referring to the aforementioned process as diagramed in Figures 1 and 2, and as detailed in the disclosure on pages 11-12. Therefore, a lack of response to the second signal within the second time period is equivalent to the second server discovering another server operating at the monitor server address.

Coile et al teaches a system in which a primary network device will not take over for a standby device if the primary network device discovers that the standby device is already active, (col. 11, lines 49-54).

Coile et al fails to teach a system in which a backup device is operated as a primary device in the event that it discovers another device already operating as a backup device.

Li et al discloses a system of routers comprising an active router and a standby router, as well as a group of inactive routers that can be used to replace either an active or standby router, (see Abstract). In col. 10, lines 14-31, a process is disclosed in which a new router does not receive a response to a signal sent to the current standby router, (col. 10, lines 18-19), discovers another inactive router of higher priority, (col. 10, lines 24-27), and is thereafter available to take the place of a primary server, (col. 2, lines 44-46). It is also disclosed that, should the new router discover another router acting as standby router, the new router would also

thereafter be available to take the place of a primary server, (see col. 2, lines 44-46).

This offers the advantage of having more than one router always available to fill a deficiency in either the primary or standby roles.

Coile et al and Li et al are considered analogous art because they both disclose systems in which a primary network device is backed up by a standby network device. Moreover, these systems both involve automatic signaling between the primary and standby devices to determine when a device requires replacement, and to facilitate automatic replacement.

One of ordinary skill in the art at the time of applicant's invention would have clearly understood the advantages of allowing all network devices in a system to quickly fill a deficiency in either the primary or standby roles as disclosed in Coile et al and Li et al. It would have been obvious to one of ordinary skill in the art that, a server that was previously available to fill in as a primary or secondary server, when attempting to serve as standby server and discovering that that role is already filled, should again be made available to fill in, as needed, in either a primary or secondary role. Though Coile et al does not explicitly teach the step in which a server discovers the standby role is filled, and thereafter attempts to perform the role of the primary, Coile et al does teach a system in which any server is able to identify another as being active and will attempt to provide backup services if another backup server is not present, (see Fig. 7). One of ordinary skill in the art at the time of applicant's

invention would have been properly motivated to include the step of a server attempting to fill a primary role when discovering the standby is filled in order to increase the responsiveness of the system to a deficiency in either the standby or primary roles.

Response to Arguments

4. The amendments to the specification, drawings and claims, see pages 11-13, sections **PRIORITY, DRAWINGS, SPECIFICATION, CLAIM OBJECTIONS**, are accepted by the examiner, and the respective objections are hereby withdrawn.
5. The amendments to the claims regarding the 35 U.S.C. 112, second paragraph, rejections, see page 13, section **CLAIM REJECTIONS – 35 U.S.C 112**, are accepted by the examiner, and the respective rejections are hereby withdrawn.
6. Applicant's arguments, see **CLAIM REJECTIONS – 35 U.S.C 112** on pages 12 and 13, filed 08/26/2004, with respect to claim 12 have been fully considered and are persuasive. The rejection of claim 12 has been withdrawn.
7. Applicant's arguments, see pages 13-16, filed 08/26/2004 have been fully considered but they are not persuasive.

On page 13, under section **CLAIM REJECTIONS – 35 U.S.C 102**, with respect to claims 1, 13 and 20, the applicant argues, “that Coile, et al does not teach, inter alia, a method, [or system], for providing backup server support comprising ‘in conjunction with the booting of the first server: signaling, using a second signal, the monitor server address; and monitoring for a response to the second signal within a second time period’ in combination with the additionally claimed features as recited in claim 1, [13 and 20].” The examiner respectfully disagrees.

As interpreted by the examiner, Coile et al teaches the following steps as regards the booting of the primary network device:

- i. The second server sends a first signal to the primary server address, (col. 6, lines 14-19);
- j. The first server does not receive said first signal within a predetermined time period, (col. 9, line 15);
- k. The first server sends a second signal to the monitor server address; enters a first failure state, (see col. 9, lines 15-20; note that even when a communication attempt fails, it is disclosed that the communication attempts are continued as taught in col. 6, lines 14-19);
- l. The second server monitors for receipt of said second signal within a second time period, (col. 6, lines 14-19);
- m. The second server resends said first signal to the primary server address, (col. 6, lines 14-19);

- n. The first server, again, does not receive said first signal within a predetermined time period, (col. 9, lines 19-22);
- o. The first server resends said second signal to the monitor server address; enters a second failure state, and is rebooted, (col. 9, lines 23-28, again note that it has been disclosed that communication attempts continue regardless of the failure state of a network device, see col. 9, lines 15-20);
- p. The second server monitors for receipt of said second signal within a second time period, (col. 6, lines 14-19).

Therefore, the examiner has determined that Coile et al also teaches the steps of, in conjunction with the booting of the first server:

- Signaling, using a second signal, the monitor server address, (interpreted as either signaling step c or g, above); and
- Monitoring for a response to the second signal within a second time period, (interpreted as either monitoring step d or h, above).

Moreover, the claim language of “in conjunction with”, as interpreted by the examiner, is sufficiently broad so as to require only that the steps of signaling, using a second signal, and monitoring for a response to the second signal, be carried out within the same process that initiates the booting of the first server.

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On page 14, under the section, **CLAIM REJECTIONS – 35 U.S.C 102**, with respect to cancelled claim 2, and newly added claim 21, the applicant argues that, "Coile et al fails to teach that the first server includes a first server memory in addition to the second server including a second server memory as recited in claim 21 of the present application." The examiner respectfully disagrees.

Please note that Coile et al teaches two network devices, that can operate as either a primary or a backup server, (col. 5, lines 25-32). Coile et al, in reference to Fig. 9, elements 916 and 922, also discloses that, in the preferred embodiment, each network device includes its own local memory. Therefore, Coile et al teaches a first and a second server including a first server memory and a second server memory respectively.

8. Please also note that the amendment to the claims filed on 08/26/2004 does not comply with the requirements of 37 CFR 1.121(c) because the status of claim 19 has been omitted. Claim 19 should be indicated as "Currently Amended". Amendments to the claims filed on or after July 30, 2003 must comply with 37 CFR 1.121(c) which states:

(c) *Claims*. Amendments to a claim must be made by rewriting the entire claim with all changes (e.g., additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. **In the claim listing, the status of every**

claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Chang et al, (U.S. 2004/0153697 A1), teaches a method and system for implementing redundant servers comprising sending and monitoring heart beat signals.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron D Matthew whose telephone number is (703) 605-1211, or (571) 272-3662 after Oct. 13, 2004. The examiner can normally be reached on Mon-Fri, from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (703) 305-9713, or (571) 272-3645 after Oct. 13, 2004. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aaron D Matthew
Examiner
Art Unit 2114

ADM


ROBERT BEAUSOLIEL
SENIOR PATENT EXAMINER
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